

Application No. 10/675,118
Amendment dated April 10, 2006
Reply to Office Action of February 9, 2006

Please amend the above-identified application as follows:

AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph 0022 with the following amended paragraph:

[0022] Figure 6 is a partial cross-sectional view of one embodiment of a composite riser of the present invention. In this cross-section there is the liner 34, attached to the metal composite interface 70. Covering the outside of the liner 34 is reinforcing layer 38 and in this embodiment the reinforcing layer also covers a portion of the metal composite interface 70. Over the top of the reinforcing layer is the shear ply layer 40 which also serves as a fluid seal. The shear ply layer 40 extends over the connecting surface 72 of the metal composite interface which in this illustration is a trap lock design. The outer layers 76 are not detailed but simply shown as the single unit in the drawing for convenience. The main outer body 76 which covers the shear ply layer 40 has a portion of the fibers embedded in the trap locks 78 to secure the outer composite layers to the metal composite interface 70. The outer layer does not cover the end of the metal composite interface so that flange 80 is exposed. Flange 80 includes holes [[82]], not shown, to receive bolts or other fasteners to connect separate risers together. Any other fastening [[mechanisms]] mechanisms can be used. This is a less preferred embodiment because of the possibility that water may be able to migrate between the shear ply layer 40 and metal composite interface 70 and then migrate to the reinforcing layer 38. A reinforcing layer 38 of composite material will typically contain cracks in the resin at elevated pressures, and thus the presence of water penetrating the reinforcement layer 38 in some instances could cause the metal liner 34 to separate from the reinforcing layer and collapse.

Please replace paragraph 0023 with the following amended paragraph:

[0023] Figure 7 shows a partial cross-sectional view of another embodiment of the present invention. In this embodiment, the metal composite interface 70 is provided with a groove 82 which is substantially parallel to the axis 14 of the riser. In this embodiment,

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the reinforcing layer 38 is covered by the shear ply layer 40; however, near the end of the shear ply interfacing with the metal composite interface 70 has a seal section 84 which is generally Y-shaped that provides a pressure activated seal. In the event that water leaks between the end of shear ply layer 40 and the metal composite interface 70, the water will travel between the shear ply and a metal composite interface until it reaches the groove 82. When the water reaches the outer side of the groove 82 it will push the pressure activated sealing section 84 into contact with the inner surface 86 of the groove 82. Thus, a seal will be formed as a result of the pressure pushing the shear ply layer 40 against the inside surface 86 of the groove 40 preventing migration of the water beyond the sealing tab. In a similar manner, the seal will also prevent fluid that may leak through the liner and reinforcing layer from leaking from the composite riser.

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